

**PWM-BASED DC-DC CONVERTER WITH ASSURED DEAD
TIME CONTROL EXHIBITING NO SHOOT-THROUGH
CURRENT AND INDEPENDENT OF TYPE OF FET USED**

ABSTRACT

A control circuit for a switch mode DC-DC converter contains an arrangement of monitored LGATE, UGATE and PHASE node condition threshold detectors, outputs of which are processed in accordance with a switching control operator to ensure that each of an upper FET (UFET) and a lower FET (LFET) is completely turned off before the other FET begins conduction, thereby maintaining a dead time that exhibits no shoot-through current and is independent of the type of switching FET.